

CLAIMS

What is claimed is:

5 comprising: An OFDM signal frame sync signal generator,

a bandpass filter adapted to remove a significant portion of a signal corresponding to at least one digital channel from a received OFDM signal; and

10 an OFDM frame synchronizing correlator adapted to generate a frame sync signal based on a detected correlation of a cyclically extended portion of a data frame in said received OFDM signal after processing by said bandpass filter.

15 2. The OFDM signal frame sync signal generator according to claim 1, wherein:

said significant portion of said at least one digital channel is a portion in a frequency domain farthest from a center frequency of an analog channel contained in said received OFDM signal.

20 3. The OFDM signal frame sync signal generator according to claim 1, wherein:

said bandpass filter is adapted to significantly remove a significant portion of each of two digital channels from said received OFDM signal.

25 4. The OFDM signal frame sync signal generator according to claim 3, wherein:

30 said significant portion of said two digital channels are respective portions in a frequency domain farthest from a center frequency of an analog channel contained in said received OFDM signal.

5. The OFDM signal frame sync signal generator according to claim 1, wherein:

said bandpass filter is a digital bandpass filter.

5

6. The OFDM signal frame sync signal generator according to claim 1, wherein:

said OFDM frame synchronizing correlator generates said frame sync signal based on an integrated detection of respectively correlated cyclically extended portions of a plurality of data frames.

10

7. A method of detecting a timing of a data frame in a received OFDM signal, comprising:

filtering out a significant portion of a signal corresponding to at least one digital channel from said received OFDM signal to provide a bandpass filtered OFDM signal;

correlating a cyclically extended portion of a data frame in said bandpass filtered OFDM signal; and

generating a frame sync signal based on a correlation of said cyclically extended portion of said data frame.

15

20

8. The method of detecting a timing of a data frame in a received OFDM signal according to claim 7, wherein said filtering comprises:

digitally filtering.

25

9. The method of detecting a timing of a data frame in a received OFDM signal according to claim 7, wherein:

5 said correlating correlates respective cyclically extended portions of a plurality of data frames in said bandpass filtered OFDM signal.

10. Apparatus for detecting a timing of a data frame in a received OFDM signal, comprising:

10 means for filtering out a significant portion of a signal corresponding to at least one digital channel from said received OFDM signal to provide a bandpass filtered OFDM signal;

means for correlating a cyclically extended portion of a data frame in said bandpass filtered OFDM signal; and

15 means for generating a frame sync signal based on a correlation of said cyclically extended portion of said data frame.

11. The apparatus for detecting a timing of a data frame in a received OFDM signal according to claim 10, wherein said means for filtering comprises:

20 means for digitally filtering said received OFDM signal.

12. The apparatus for detecting a timing of a data frame in a received OFDM signal according to claim 10, wherein:

25 said means for correlating correlates respective cyclically extended portions of a plurality of data frames in said bandpass filtered OFDM signal.